

PRELIMINARY DETERMINATION
Southern Parallel Forest Products
Albertville Sawmill
Facility No. 711-S001
Air Permit No. X006

Introduction

On July 19, 2018, Southern Parallel Forest Products submitted a complete Prevention of Significant Deterioration (PSD) permit application for the proposed construction and operation of a continuous direct-fired kiln (CDK) at its Albertville Sawmill facility located at 660 Industrial Boulevard, Albertville, Marshall County, Alabama. The facility currently has a production capability of approximately 120 MMBF/yr utilizing two batch lumber dry kilns that are indirectly heated by steam from three natural gas-fired boilers. The proposed CDK would have a production capability of 110 MMBF/yr and would be directly heated by a 35 MMBtu/hr wood-fired burner. Aside from the construction of the CDK, there would be no other physical modifications to the facility.

Air Permit No. X006 would be issued for the proposed CDK, pending the resolution of any comments that may be received during the public comment period. The draft Air Permit is included in Appendix B. After the original application was received on April 24, 2018, a revised application was received by the Air Division on July 19, 2018.

Background

The Albertville Sawmill began operations in 1976 and produces dimensional lumber from southern yellow pine logs. Received via trucks, the logs are stored temporarily on facility property, cut to length, and debarked. The debarked logs are conveyed to the sawmill, where they are cut into various lengths of two-inch lumber. Bark and sawdust from the sawmill is pneumatically conveyed and stored. Excess sawdust can be pneumatically conveyed to a truck loading bin for shipment. SPFP operates a chipper with a pneumatic transfer system and cyclone. The green lumber is sorted by size and stacked on railcars before entering the dry kilns. The lumber is dried in batches in two adjacent 150 MBF, steam-heated lumber dry kilns. The dried lumber exits the kiln to a cooling shed, then moves to a storage area until it is processed through the planer mill, packaged, and loaded onto trucks for shipment. Planer shavings are pneumatically transferred to the truck-loading bin for shipment. The current Title V MSOP includes two high-temperature, 150 MBF lumber dry kilns (002), three pneumatic wood by-product transfer cyclones (003/C100; 004/C101; 005/C102), three 28.576 MMBtu/hr natural gas-fired boilers (007), and an emergency diesel fire pump engine (Unit 008).

The facility ceased operations on November 15, 2009, but maintained its permit. The MSOP underwent a name change from Bowater Inc. to Southern Parallel Forest Products on March 25, 2011, though there was interim ownership by Progress Rail Services with no permit change. The facility re-opened in May 2013 under its new ownership.

Southern Parallel Forest Products (Bowater Inc. at the time) most recently underwent PSD for the proposed expansion of, and increase in production through, the two existing steam-heated lumber dry kilns, for which Air Permit No. X004 was issued on April 9, 2008. The kilns previously underwent PSD in 2003, and a combined production limit of 125,000 MBF per year was established. In the 2008 PSD action, the total allowed throughput capacity was increased to 187,800 MBF per year, a production limit established in X004 which superseded the previous limit. Though the physical expansions were not made, the production limit evaluated in the PSD action remains in place. Each existing batch kiln is subject to a VOC BACT emission limit of 7.0 lb/MBF expressed as pinene with a response factor of 1.13 lb pinene/lb carbon.

Proposed Project

Southern Parallel Forest Products proposes to construct and operate a continuous direct-fired kiln (CDK), which would be designated as Emission Unit No. 009. The CDK would be directly heated by a 35 MMBtu/hr sawdust burner. The kiln would have two powered stacks (one at each end) through which a portion of the airflow would be exhausted, with the remaining airflow exiting the kiln ends.

The CDK would necessitate the construction of a new fuel handling system. There would be no dedicated fuel silo or pneumatic transference. Instead, sawdust fuel would be mechanically conveyed to the burner from walking floor bins.

Applicability: Federal Regulations

Title V

This existing facility is a major source under the Title V regulations because potential emissions for Particulate Matter (PM) and Volatile Organic Compounds (VOC) exceed the 100 TPY major source threshold. Potential SO₂ emissions based on the State regulatory allowable (4.0 lb/MMBtu heat input) also exceed 100 TPY though expected SO₂ emissions from natural gas fuel are negligible. The facility is also a major source of hazardous air pollutants (HAP). It has the potential to emit more than 10 TPY of methanol and more than 25 TPY of combined HAP. After the project, the facility would be a major source of PM, CO, VOC, individual HAP (methanol), and combined HAP emissions.

Southern Parallel Forest Products would be required to submit an application for a significant modification of its Major Source Operating Permit within 12 months of commencing operation of the proposed CDK.

NSPS

Since the proposed CDK burner would provide direct heat to the kiln in which the combustion gases would contact the lumber being dried, it would not be subject to 40 CFR Part 60, Subpart Dc. There are no other NSPS potentially applicable to the project.

MACT

The PCWP MACT, 40 CFR Part 63, Subpart DDDD, regulates HAP emissions from activities associated with the manufacture of plywood and other composite wood products, including stand-alone lumber kilns, in accordance with 40 CFR §63.2232. Processes that are not subject to the compliance options or work practice requirements specified in 40 CFR §63.2240, such as the proposed CDK, are specifically not required to comply with the compliance options, work practice requirements, performance testing, monitoring, startup/shutdown/maintenance (SSM) plans, and recordkeeping or reporting requirements of the subpart, or any other requirements in 40 CFR 63 Subpart A, except the initial notification requirements in 40 CFR §63.9(b) in accordance with 40 CFR §63.2252. The application serves as the initial notification of the intention to construct the CDK, an affected source under PCWP MACT.

Prevention of Significant Deterioration (PSD)

This facility is located in an attainment area for all criteria pollutants, and the facility operations are not one of the listed 28 major source categories. Therefore, the major source threshold of concern is 250 TPY for criteria pollutants. The facility is currently a major source under the PSD regulations for PM (regulatory allowable), SO₂ (regulatory allowable), and VOC emissions. After the proposed project, the facility would remain a major source under the PSD regulations for the same pollutants.

Southern Parallel Forest Products presented an applicability analyses for the project. Since the potential emissions of VOC and PM from the project would exceed the significant emission rates, Southern Parallel Forest Products provided a netting analysis utilizing the baseline actual emissions (BAE) to projected actual emissions (PAE) comparison for existing units that would be affected by the project (i.e. “debottlenecking”), a calculation of excludable PAE emissions (could-have-accommodated emissions not due to the CDK project), a calculation of the adjusted PAE, a calculation of the potential-to-emit for the proposed project, and a hybrid test for the net emissions increase for the proposed project. A sustained actual production of 10,449.754 MBF of green lumber through the sawmill, of which 10,031.468 MBF was dried in the kilns, was achieved for the month of March 2018, which would indicate an achievable production rate of 125,397.048 MBF (120,377.616 MBF kiln dried) per year in actual practice, on which Southern Parallel Products based its CHA emissions. The following tables summarize the calculations for determining the net emissions increase:

Baseline Actual Emissions (BAE) for Debottlenecked Existing Units
(April 2016-March 2018)

	PM	PM ₁₀	PM _{2.5}	VOC	SO ₂	CO	NO _x	CO _{2e}
Planer Mill Operation (003)	24.64	20.95	12.33	--	--	--	--	--
Sawmill Operation (004)	13.72	11.66	6.86	--	--	--	--	--
Waste Wood Chipper (005)	2.30	1.95	1.15	--	--	--	--	--
BAE	40.66	34.56	20.33	--	--	--	--	--

Projected Actual Emissions (PAE) for Debottlenecked Existing Units

	PM	PM ₁₀	PM _{2.5}	VOC	SO ₂	CO	NO _x	CO _{2e}
Planer Mill Operation (003)	30.05	25.54	15.04	--	--	--	--	--
Sawmill Operation (004)	17.77	15.11	8.89	--	--	--	--	--
Waste Wood Chipper (005)	2.97	2.53	1.49	--	--	--	--	--
PAE	50.80	43.18	25.40	--	--	--	--	--

Could Have Accommodated (CHA) Emissions without CDK Project

(April 2016-March 2018; Capable of 120.4 MMBF/yr through the kilns; 125.4 MMBF through the sawmill;
Actual production was 86.6 MMBF/yr)

	PM	PM ₁₀	PM _{2.5}	VOC	SO ₂	CO	NO _x	CO _{2e}
Planer Mill Operation (003)	30.57	25.99	15.30	--	--	--	--	--
Sawmill Operation (004)	14.45	12.28	7.22	--	--	--	--	--
Waste Wood Chipper (005)	2.42	2.06	1.21	--	--	--	--	--
CHA	47.44	40.33	23.73					

Excludable Emissions (EE)

(EE are calculated as the portion of the PAE above the BAE that the existing equipment could have accommodated and that are not resulting from the proposed CDK project)

	PM	PM ₁₀	PM _{2.5}	VOC	SO ₂	CO	NO _x	CO _{2e}
Planer Mill Operation (003)	5.93	5.04	2.97	--	--	--	--	--
Sawmill Operation (004)	0.73	0.62	0.36	--	--	--	--	--
Waste Wood Chipper (005)	0.12	0.11	0.06	--	--	--	--	--

Adjusted Projected Actual Emissions (adjusted PAE)

(Adjusted PAE is calculated by subtracting the EE from the PAE)

	PM	PM ₁₀	PM _{2.5}	VOC	SO ₂	CO	NO _x	CO _{2e}
Planer Mill Operation (003)	24.64	20.50	12.07	--	--	--	--	--
Sawmill Operation (004)	17.04	14.49	8.53	--	--	--	--	--
Waste Wood Chipper (005)	2.85	2.42	1.43	--	--	--	--	--
Adjusted PAE	44.53	37.41	22.03	--	--	--	--	--

Net Increases for Debottlenecked Existing Units

(Adjusted PAE minus BAE)

	PM	PM ₁₀	PM _{2.5}	VOC	SO ₂	CO	NO _x	CO _{2e}
Adjusted PAE	44.53	37.41	22.03	--	--	--	--	--
<i>Minus</i> BAE	40.66	34.56	20.33	--	--	--	--	--
Net Increase for Existing Units	3.87	2.85	1.70	--	--	--	--	--

Net Increases for CDK Project
(PTE for CDK plus net increases for existing units)

	*PM	*PM₁₀	*PM_{2.5}	VOC	SO₂	CO	NO_x	CO_{2e}
Proposed CDK (X006)	9.86	9.86	8.06	263.07	3.83	91.98	33.73	32,125
Net Increases for Existing Units	3.87	2.85	1.70	--	--	--	--	--
Net Increase	13.73	12.71	9.76	263.07	3.83	91.98	33.73	32,125
PSD Significant Emission Rate	25	15	10	40	40	100	40	75,000
PSD Triggered?	No	No	No	Yes	No	No	No	No

Due to the triggering of particulate matter due to use of the State allowable rate based on process weight, Southern Parallel Forest Products requested particulate matter emission limits* for the proposed CDK. Based on this netting analysis, net VOC emissions increase from the project would be 263.07 TPY, which exceeds the PSD significance level of 40 TPY for VOC. Therefore, Southern Parallel Forest Products is required to conduct a PSD review for VOC emissions.

Sources subject to PSD must satisfy the following requirements before being allowed to initiate construction:

1. Provide opportunity for public participation in the permitting process relative to the air quality impact the source would have if it were built.
2. Obtain a permit which sets forth emission limitations.
3. Demonstrate that the emissions from the source would not cause or contribute to a violation of the PSD increment or the NAAQS.
4. Apply best available control technology (BACT), which is defined in terms of an emission limitation, based on the maximum degree of reduction of each pollutant which is determined to be technically and economically achievable for that particular source.
5. Analyze the impairment to visibility, soils, and vegetation that might occur as a result of operation of the source.
6. Analyze the air quality impacts projected due to the growth associated with the facility.
7. Conduct any ambient air quality monitoring necessary to determine the effect of the emissions on air quality.

Public Participation

In order to satisfy the public participation requirement, a copy of the preliminary determination (this engineering analysis) and the permit applications will be made available on the Department's website for at least 30 days of public review. After the 30-day public comment period and within 5 days of the PSD permit issuance, the final

determination will be made available on the Department's eFile system. The final determination consists of copies of the signed permits, any comments received during the public comment period, and any responses made to those comments.

BACT Determination

During a PSD review, new and modified sources must be assessed for Best Available Control Technology, or BACT, if the emissions increase is significant. BACT is an emission limit based on the maximum pollutant reduction achievable considering energy, economic, and environmental impacts. BACT is determined on a unit by unit, pollutant by pollutant basis. The BACT limit can be no less stringent than any applicable New Source Performance Standard (NSPS), National Emission Standard for Hazardous Air Pollutants (NESHAP), or other applicable standard. No applicable NSPS has been promulgated for continuous direct-fired lumber dry kilns.

For the proposed project, BACT must be determined for VOC emissions from the CDK. Southern Parallel Forest Products utilized the "top-down" approach for the BACT analysis. This approach considers the most stringent control option available and a determination of its technical feasibility for the emission unit in question. If the option is not rejected, the applicant must analyze the option based upon economic, environmental, and energy considerations. Below are the five basic steps of a top-down BACT review procedure as identified by the US EPA in the March 15, 1990, Draft BACT Guidelines:

- Step 1. Identify all control technologies
- Step 2. Eliminate technically infeasible options
- Step 3. Rank remaining control technologies by control effectiveness
- Step 4. Evaluate most effective controls and document results
- Step 5. Select BACT

Step 1. Identify all control technologies:

Southern Parallel Forest Products examined the feasibility of the following seven control technologies:

- Regenerative Thermal Oxidation (RTO);
- Regenerative Catalytic Oxidation (RCO);
- Carbon Adsorption;
- Condensation;
- Biofiltration;
- Wet Scrubbing;
- Proper Maintenance & Operation

Regenerative Thermal Oxidation

Regenerative thermal oxidizer (RTO) units use beds of ceramic pieces to recover and store heat. A VOC laden air stream passes through a heated ceramic bed before entering a combustion chamber. In the combustion chamber, the VOC-laden gas stream is heated by auxiliary fuel (natural gas) combustion to a final oxidation temperature typically between 1,400°F and 1,500°F and maintained at this temperature to achieve maximum VOC destruction. The exhaust gases from the combustion chamber are used to heat another ceramic bed. Periodically, the flow is reversed so the bed that was being heated is now used to preheat the VOC-laden gas stream. Usually, there are three or more beds that are continually cycled. Destruction efficiency of VOC depends upon the design criteria (i.e. chamber temperature, residence time, inlet VOC concentration, compound type, and degree of mixing). Typical VOC destructive efficiency ranges from 95% to 99% for RTO systems depending on system requirements and characteristics of the contaminated gas stream. Lower control efficiencies are generally associated with lower concentration flows.

Regenerative Catalytic Oxidation

Regenerative catalytic oxidizer (RCO) units function similar to an RTO, except that the heat recovery beds in the RCO contain catalytic media. The catalyst accelerates the rate of VOC oxidation and allows for VOC destruction at lower temperatures than in an RTO, typically 600°F to 1,000°F, which reduces auxiliary fuel usage. Typical VOC destructive efficiency ranges from 90% to 99% for RCO systems. However, this also depends on system requirements and characteristics of the contaminated gas stream.

Carbon adsorption

The core component of a carbon adsorption system is an activated carbon bed contained in a steel vessel. The VOC-laden gases pass through the carbon bed and the VOCs are adsorbed on the activated carbon. The cleaned gas is discharged to the atmosphere. The spent carbon is regenerated either at an onsite regeneration facility or by an off-site activated carbon supplier. Steam is used to replace adsorbed organic compounds at high temperatures to regenerate the spent carbon. At proper operating conditions, carbon adsorption systems have demonstrated VOC reduction efficiencies of approximately 90% to 95%.

Condensation

Condensation systems remove VOC emissions from the gas stream by cooling it and converting the vapor into a liquid. In some instances, control of VOC can be satisfactorily achieved entirely by condensation. However, most applications require additional control methods. In such cases, the use of a condensation process reduces the concentration load on downstream control equipment. The two

most common type of condensation devices are contact or barometric condensers and surface condensers.

Biofiltration

Biofiltration is an air pollution control technology in which off-gasses containing biodegradable organic compounds are vented, under controlled temperature and humidity, through a special filter material containing microorganisms. As exhaust gases pass through the biofilter, VOC is absorbed on the filter material, and the microorganisms break down the compounds and transform them into CO₂ and H₂O with varying efficiency.

Wet Scrubbing

Scrubbing of gas or vapor pollutants from a gas stream is usually accomplished in a packed column (or other type of column) where pollutants are absorbed by counter-current flow of a scrubbing liquid. A VOC laden gas stream with relatively high water solubility is required in order for the wet scrubber to be effective.

Proper Maintenance and Operation

Proper maintenance and operation of lumber drying kilns can effectively reduce VOC emissions. Proper drying schedule and temperature should be selected based on moisture content and manufacturer specifications. Routine maintenance should also be completed on kilns based on manufacturer recommendations.

Step 2. Eliminate technically infeasible options:

Regenerative Thermal Oxidation

According to the application, the use of a RTO would be technically infeasible due to the high moisture content and low exit temperature of the kiln exhaust gas stream. No such system has been applied to a lumber dry kiln.

Regenerative Catalytic Oxidation

Although a RCO can operate at a lower temperature than a RTO, the temperature of the exit stream from the kiln is not high enough for optimal function of the RCO. Additionally, the catalyst would be subject to fouling or poisoning from the particulate and other contaminants in the gas stream. In order for the RCO system to operate effectively, the contaminants must be removed from the incoming gas stream, which would add greatly to the cost of the control system. No such system has been applied to a lumber dry kiln. The applicant indicated that this technology is technically infeasible.

Carbon adsorption

Carbon adsorption is not practical for this application due to the high moisture content of the exhaust stream. At high moisture content, water molecules compete with the hydrocarbon molecules for active adsorption sites. This reduces the capacity and efficiency of the adsorptions system. There are no known lumber dry kilns equipped with a carbon adsorption system. The applicant indicated that this technology is technically infeasible.

Condensation

Condensation is effective when the gas stream can be cooled to a temperature where VOC condense as a liquid out of the gas stream. To condense terpenes, the primary constituent of lumber kiln VOC emissions, the temperature would need to be reduced to -40°F. At this temperature, freezing of the water vapor would generate ice, causing plugging of the unit. The applicant indicated that this technology is technically infeasible.

Biofiltration

Temperature is an important variable affecting biofilter operations. Microorganisms can survive and flourish in a temperature range of 60°F to 105°F. The exhaust temperature of the proposed kiln would be approximately 140°F to 200°F. Also, the VOC emissions from the kiln would be primarily terpenes, which are highly viscous and would foul the biofilter. Due to the temperature requirement, large footprint requirement for a biofilter system, and the unproven application of biofiltration to this type of process, the applicant indicated that this technology is technically infeasible.

Wet Scrubbing

The VOC emissions from the kiln would be primarily terpenes, which are not highly soluble. Terpenes are highly viscous and would likely plug the absorption media of a wet scrubber. The applicant indicated that this technology is technically infeasible.

Step 3 Rank remaining control technologies by control effectiveness:

Proper Maintenance and Operation

According to the application, the only technically feasible control technology for controlling VOC emissions from the proposed CDK is the use of proper maintenance and operating practices. Since this was the only remaining BACT control technology technically or economically feasible, no cost analysis was performed.

Step 5. Select BACT:

Southern Parallel Forest Products proposed the following emission level as BACT for the CDK:

Pollutant	BACT Determination	BACT Emission Limit	Equivalent Emissions
VOC	Proper Kiln Maintenance and Operation	4.78 lb/MBF, as WPP1 VOC*	263 TPY per kiln (based on a design capacity of 110,000 MBF/yr)

*"WPP1 VOC" is an acronym for Wood Products Protocol 1 VOC. WPP1 VOC refers to VOC emissions expressed in accordance with the document "Interim VOC Measurement Protocol for the Wood Products Industry – July 2007." This EPA document established procedures and emission measurement methods to approximate VOC emissions for determining applicability with Federal programs and to establish consistency across State programs for the forest products industry.

A search of EPA RACT/BACT/LAER Clearinghouse indicated that no facilities are utilizing add-on controls for lumber kilns, and the proposed VOC emission limit of 4.78 lb/MBF (as WPP1 VOC) appears to be consistent with other BACT determinations for continuous kilns in the wood products industry with VOC limits expressed as WPP1.

The Air Division concurs that proper kiln maintenance and operation and the 4.78 lb/MBF (as WPP1 VOC) emission limit represents BACT for the proposed CDK.

For monitoring, Air Permit for the CDK would include a requirement to develop, implement, and submit to the Air Division a maintenance and operation plan within six months of issuance of Temporary Authorization to Operate for the kiln.

Modeling

Air Toxics modeling was not required for this application. Although the VOC (ozone precursor) increase is expected to exceed the 100 TPY PSD de minimus impact level, the Air Division accepted the use of representative regional ozone data from the Crossville, Dekalb County, Alabama monitor, Station 01-049-9991 in lieu of site-specific monitoring for ozone. A memo from the Control Strategies Section of the Planning Branch is attached in Appendix A.

Additional Impacts

An additional impact analysis assesses the impacts of air, ground, and water pollution on soils, vegetation, and visibility caused by any increase in emissions of any regulated pollutant resulting from the modification under review and from associated growth. The

depth of the analysis depends on existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the source's impact area. Southern Parallel Forest Products addressed the impacts of the proposed project with respect to growth, soils and vegetation, and visibility.

The National Ambient Air Quality Standards (NAAQS) are intended to protect the public welfare from adverse effects of airborne pollutants. This protection extends to soil and vegetation. Predicted concentrations of VOC resulting from the new kiln would not cause or contribute to the violation of the NAAQS. Because the NAAQS were established to protect human welfare, no significant impacts on the soil are expected due to the proposed project.

The effects of air pollution on vegetation can be classified into three distinct categories: acute, chronic, and long-term. Acute effects are those resulting from a short exposure (< 1 month) to high concentrations. Chronic effects refer to those developed from exposure to a threshold level of pollutant over months or years. Long-term effects refer to abnormal changes in ecosystems and subtle physiological alterations in organisms. Both acute and chronic effects are the result of an airborne pollutant acting directly on an organism while long-term effects can be indirectly caused by secondary effects such as changes in soil pH.

In addition to BACT, Southern Parallel Forest Products proposes to utilize good working practices for equipment associated with the proposed kiln. The combination of BACT, good work practices, and minimal air quality impacts would result in minimal impact on the soil and vegetation in and around the site. Furthermore, any change in the air quality impacts on soils and vegetation due to the proposed CDK would be negligible as there would be insignificant net increases of particulate, SO₂, and NO_x emissions. The effects to visibility on the nearby area are expected to be negligible. The facility is not located within 100 km of any PSD Class I Area and no Class I area impact analysis would be required.

Regarding growth, the application indicated that the construction and operation of the proposed kiln would have no noticeable residential or commercial growth in the area.

Applicability: State Regulations

Particulate Matter

The CDK would be subject to the State particulate matter emission standards for process industries as provided in ADEM Admin. Code r. 334-3-4-.04(1). The process weight is determined by the weight of fuel burned in the burner. As the burner would supply direct heat to the kiln, it would not be considered "fuel burning equipment", and therefore not subject to ADEM Admin. Code r. 335-3-4-.03(1). Additionally, to avoid triggering PSD for particulate matter (PM) due to the State allowable based on process weight, Southern Parallel Forest Products requested to limit the PM allowable emissions from the CDK to 2.25 lb/hr, which is inclusive of PM₁₀, PM_{2.5}, and condensable particulate matter.

Visible Emissions

The CDK would be subject to the State visible emission standards of ADEM Admin. Code r. 335-3-4-.01(1), which states that no air emission source may emit particulate of an opacity greater than 20% (as measured by a six-minute average) more than once during any 60-minute period and at no time shall emit particulate of an opacity greater than 40% (as measured by a six-minute average).

Sulfur Dioxide

Since the burner for the CDK would provide direct heat, it would not be subject to the State SO₂ emission standard for fuel burning equipment found in ADEM Admin. Code r. 335-3-5-.01(1).

Emission Testing and Monitoring

I recommend that no emission testing be required for the proposed CDK at this time since it is expected that the kiln would be able to comply with the proposed BACT and synthetic minor limitations, testing for continuous kilns is not easily conducted, and there are no emission control devices.

To ensure that the maximum capacity of the proposed CDK is not exceeded, Southern Parallel Forest Products would be required to calculate the kiln production on a monthly and 12-month rolling total basis, to be updated within ten (10) days of the end of each calendar month.

Recordkeeping and Reporting

Recordkeeping

Southern Parallel Forest Products would be required to maintain records of its actions taken to comply with proper maintenance and operating practices. Records of monthly and 12-month rolling production would also be required. These records shall be maintained on-site in a permanent form readily available for inspection.

Reporting

Southern Parallel Forest Products would be required to submit Semiannual Monitoring Reports for the CDK, which would include a certification that all emission monitoring and proper maintenance and operating practices were accomplished as required during the reporting period, and if not, describe the date and reason any required action was not accomplished.

Conclusions and Recommendations

This analysis indicates that the facility would meet the requirements of all applicable federal and State rules and regulations. Therefore, I recommend that Southern Parallel Forest Products be issued the following Air Permit pending the resolution of any comments received during the 30-day public comment period:

X006 - 110,000 MBF/yr Continuous Direct-Fired Lumber Dry Kiln (EU-009) with 35 MMBtu/hr Wood-Fired Burner (PSD/SMS)



Jeffrey A. Strickland
Chemical Branch
Air Division

July 24, 2018
Date

APPENDIX A

Modeling Memo




Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

June 6, 2018

MEMORANDUM

TO: Jeff Strickland 
Natural Resources Section
Chemical Branch
Air Division

FROM: Megan Travis 
Meteorological Section
Planning Branch
Air Division

SUBJECT: Modeled Emission Rates for Precursors Analysis for Southern Parallel Forest
Products Prevention of Significant Deterioration Permit Application

ADEM has completed its review of the Modeled Emission Rates for Precursors (MERPs) analysis performed by GBMc & Associates on behalf of Southern Parallel Forest Products. The purpose of the analysis was to assess the impacts on air quality from emissions of Volatile Organic Compounds (VOCs) from a proposed kiln construction project located in Albertville, Marshall County, Alabama.

This MERPs analysis was performed for Ozone. Precursor emission impacts to Ozone were considered and include VOCs and NO_x. If the calculation from the MERPs analysis is less than 100%, it indicates that the air quality threshold will not be exceeded and no further modeling is required. For Ozone, the following total emissions were considered: 263.07 TPY for VOCs and 33.73 TPY for NO_x. The results from the MERPs analysis are presented in Table 1.

TABLE 1
MERPs Analysis Results

Pollutant	Results
Ozone	55%

This result shows that the MERPs value for Ozone is below 100%, and no further analysis is required.



APPENDIX B

Draft Air Permit

AIR PERMIT

PERMITTEE: SOUTHERN PARALLEL FOREST PRODUCTS, INC.
FACILITY NAME: ALBERTVILLE SAWMILL
LOCATION: ALBERTVILLE, MARSHALL COUNTY, ALABAMA

PERMIT NUMBER	DESCRIPTION OF EQUIPMENT, ARTICLE OR DEVICE
711-S001-X006	110,000 MBF/yr Continuous Direct-Fired Lumber Dry Kiln (EU-009) with 35 MMBtu/hr Wood-Fired Burner (PSD/SMS)

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, as amended, Ala. Code §§22-28-1 to 22-28-23 (2006 Rplc. Vol. and 2007 Cum. Supp.) (the "AAPCA") and the Alabama Environmental Management Act, as amended, Ala. Code §§22-22A-1 to 22-22A-15 (2006 Rplc. Vol. and 2007 Cum. Supp.), and rules and regulations adopted there under, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: DRAFT

SOUTHERN PARALLEL FOREST PRODUCTS, INC
ALBERTVILLE, ALABAMA
(PERMIT NO. 711-S001-X006)
PROVISOS

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. The Permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
5. Each point of emission, which requires testing, will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
6. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shutdown as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events **that exceed 1 hour** within 24 hours. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
7. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
9. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the

Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

10. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
12. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
13. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).
- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis.

All test reports must be submitted to the Air Division within 30 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

14. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with

minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.

15. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
16. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

17. Precautions shall be taken by the Permittee and its personnel to ensure that no person shall ignite, cause to be ignited, permit to be ignited, or maintain any open fire in such a manner as to cause the Department's rules and regulations applicable to open burning to be violated.
18. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.
19. The Permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
20. The Permittee shall not cause or permit the emissions of particulate matter in any 1-hour period from this process to exceed the amount determined by use of the following equation:

$$E=3.59P^{0.62} \text{ (P < 30 tons per hour)}$$

OR

$$E=17.31P^{0.16} \text{ (P } \geq \text{ 30 tons per hour)}$$

Where: E=Emissions in pounds per hour
P=Process weight in tons per hour

21. The Permittee shall not cause or allow these sources of particulate emissions to discharge more than one 6-minute average opacity greater than 20% in any 60-minute period. At no time shall these sources discharge a 6-minute average opacity of particulate emissions greater than 40%. Opacity will be determined by 40 CFR Part 60, Appendix A, Method 9.

PSD Synthetic Minor Source Limitation

22. The Permittee shall not cause or allow the Particulate Matter (TSP/PM₁₀) emission rate from the CDK (EU-009) to exceed 2.25 lb/hr as measured by EPA Reference Method 5, 17, or 201A and EPA Reference Method 202 found at 40 CFR Part 60, Appendix A (Methods 5 and 17) and 40 CFR Part 51, Appendix M (Methods 201A and 202).
23. The Permittee shall not cause or allow the Particulate Matter (PM_{2.5}) emission rate from the CDK (EU-009) to exceed 1.84 lb/hr as measured by EPA Reference Method 5, 17, or 201A and EPA Reference Method 202 found at 40 CFR Part 60, Appendix A (Methods 5 and 17) and 40 CFR Part 51, Appendix M (Methods 201A and 202).

BACT Requirements

24. The Permittee shall not cause or allow the VOC emissions from the CDK to exceed 4.78 lb/MBF as WPP1 (as VOC expressed as propane, determined as $\text{VOC}_{\text{as C}} \times 1.225 + [(1 - 0.65) \times \text{Methanol}] + \text{Formaldehyde}$).
25. Within six (6) months of issuance of Temporary Authorization to Operate this kiln, the Permittee shall develop, implement, and submit to the Air Division a maintenance and operation plan for the kiln.

Monitoring, Recordkeeping, and Reporting

26. The Permittee shall maintain records documenting its compliance with the maintenance and operation plan required by Proviso 24 of this permit.
27. If the kiln should exceed an applicable limit at any time, the Permittee shall notify the Air Division in writing within two working days of determining that the exceedance occurred.
28. The Permittee shall calculate and record the average monthly and 12-month rolling average lumber moisture content. Within ten (10) days of the end of each calendar month, records of the average lumber moisture content for the last calendar month shall be recorded and the rolling 12-month average updated.

29. The Permittee shall maintain records of total kiln production, including monthly production and 12-month rolling totals. Within ten (10) days of the end of each calendar month, records of the total throughput for the last calendar month shall be recorded and the rolling 12-month total updated.
30. The Permittee shall retain all required records in a permanent form suitable and readily available for inspection for a period of five (5) years from the date of generation of each record.
31. The Permittee shall submit a Semiannual Monitoring Report for this kiln to the Air Division as part of the Semiannual Monitoring Report required by the Permittee's Major Source Operating Permit. This report shall include a certification that all preventive maintenance activities were accomplished as required during the reporting period, and if not, describe the date and reason any required action was not accomplished.
32. The Permittee shall submit an Annual Compliance Certification for the kiln to the Air Division as part of the Annual Compliance Certification required by the Permittee's Major Source Operating Permit. This report shall include the following for these kilns:
 - (a) The identification of each term or condition of this permit that is the basis of the certification.
 - (b) The compliance status, whether continuous or intermittent.
 - (c) The method(s) used for determining the compliance status of the source, currently and over the reporting period.
 - (d) Other facts the Department may require to determine the compliance status of the source.

The compliance certification shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

DRAFT
Date